

What is claimed is:

- 1 1. A surface laminar circuit board, comprising:
- 2 an insulating layer;
- 3 a conductive layer disposed on an upper surface of said insulating layer, said
- 4 conductive layer having a hole formed therein;
- 5 a dielectric layer disposed on an upper surface of the conductive layer; and
- 6 a conductive pad having a majority thereof within an area defined by an outer
- 7 periphery of the hole, said conductive pad being for receiving a surface mounted
- 8 component thereon.
  
- 1 2. The surface laminar circuit board of claim 1, wherein said dielectric layer is a
- 2 photosensitive dielectric layer.
  
- 1 3. The surface laminar circuit board of claim 2, wherein said photosensitive
- 2 dielectric layer is in direct contact with the insulating layer by way of the hole, and
- 3 wherein said conductive pad is disposed directly on an upper surface of said
- 4 photosensitive dielectric layer, said dielectric layer separating said conductive pad from
- 5 said conductive layer and from said insulating layer.
  
- 1 4. The surface laminar circuit board of claim 2, wherein said conductive pad is
- 2 disposed within the hole, and is in direct contact with the insulating layer.

1           5. The surface laminar circuit board of claim 1, wherein said insulating layer is  
2    an FR4 insulating layer.

1           6. The surface laminar circuit board of claim 1, wherein said conductive layer  
2    comprises a signal ground layer.

1           7. The surface laminar circuit board of claim 6, wherein said signal ground  
2    layer is comprised of copper.

1           8. The surface laminar circuit board of claim 1, wherein said hole is formed by  
2    etching.

1           9. The surface laminar circuit board of claim 2, wherein said photosensitive  
2    dielectric layer has a thickness, in a region over the conductive layer, less than about 50  
3    micrometers.

1           10. The surface laminar circuit board of claim 2, wherein said photosensitive  
2    dielectric layer has a thickness, in a region over the conductive layer, equal to or less  
3    than about 40 micrometers.

1           11. The surface laminar circuit board of claim 2, further comprising signal  
2    traces disposed directly on said photosensitive dielectric layer.

1           12. The surface laminar circuit board of claim 1, wherein said conductive pad is  
2 disposed completely within the area defined by the outer periphery of the hole.

1           13. A method of making a surface laminar circuit board, comprising:  
2 providing a laminated printed circuit board having an insulating layer, and a  
3 conductive layer over the insulating layer;  
4 patterning the conductive layer to form a hole therein, and to expose a portion of  
5 the insulating layer by way of the hole;  
6 applying a dielectric layer over the patterned conductive layer and in direct  
7 contact with the exposed portion of the insulating layer; and  
8 forming a conductive pad with a majority thereof being disposed within an area  
9 defined by an outer periphery of the hole.

1           14. The method of claim 13, wherein said forming a conductive pad forms the  
2 conductive pad on the dielectric layer, with a majority of the conductive pad being  
3 formed directly over the hole.

1           15. The method of claim 13, wherein said forming a conductive pad forms the  
2 conductive pad on the insulating layer, and within the hole.

1           16. The method of claim 12, wherein the dielectric layer is a photosensitive  
2 dielectric layer; further comprising exposing and developing the photosensitive  
3 dielectric layer to form a micro photo-via in the photosensitive dielectric layer.

1 17. The method of claim 16, further comprising forming a signal trace on the  
2 photosensitive dielectric layer and in electrical communication with the conductive  
3 layer by way of the micro photo-via.

1 18. The method of claim 16, wherein said exposing and developing removes at  
2 least a portion of the photosensitive dielectric layer from within the hole; and wherein  
3 said forming a conductive pad forms the conductive pad on the insulating layer, and  
4 within the hole.

1 19. The method of claim 13, further comprising attaching a surface mounted  
2 component to the conductive pad.

1 20. A surface laminar circuit board, comprising:  
2 an insulating layer;  
3 a signal ground conductive layer disposed on an upper surface of said insulating  
4 layer, said conductive layer having a hole formed therein;  
5 a photosensitive dielectric layer disposed on an upper surface of the signal  
6 ground conductive layer, said dielectric layer having a photo micro-via formed therein;  
7 a signal trace disposed on said photosensitive dielectric layer, and being  
8 electrically coupled with said signal ground conductive layer by way of said photo  
9 micro-via;

- 10 a conductive pad having a majority thereof within an area defined by an outer  
11 periphery of the hole, and being electrically coupled with said signal trace; and  
12 a surface mounted component mounted on said conductive pad.

1 21. The surface laminar circuit board of claim 20, wherein said photosensitive  
2 dielectric layer is in direct contact with the insulating layer by way of the hole, and  
3 wherein said conductive pad is disposed directly on an upper surface of said  
4 photosensitive dielectric layer, said dielectric layer separating said conductive pad from  
5 said conductive layer and from said insulating layer.

1 22. The surface laminar circuit board of claim 20, wherein said conductive pad  
2 is disposed within the hole, and is in direct contact with the insulating layer.